

# Cleveland Barrens Natural Area Preserve

## 501 acres - Russell County, Virginia

**The Site:** Along the Clinch River in southwestern Virginia, Cleveland Barrens Natural Area Preserve contains a series of significant dolomite barrens, thirteen rare plant species, and three rare insect species. The site lies within on the United States' top six biodiversity hotspots. The preserve was acquired with funds from the Virginia Parks and Natural Areas Bond and assistance from The Nature Conservancy.

**Natural History:** One of the most unique features of the preserve is a globally rare community type known as dolomite barrens. Dolomite bedrock contributes high levels of calcium and magnesium to the soils. At Cleveland Barrens Natural Area Preserve, four significant barrens occur on steep, southwest-facing slopes. One of these is the largest such barren in Virginia, covering seven acres. These unusual openings are characterized by thin, rocky soils and are dominated by grasses such as Indian grass (*Sorghastrum nutans*), big bluestem (*Andropogon gerardii*) and little bluestem (*Schizochyrium scoparium*). The southwest aspect of the dolomite barrens produces harsh growing conditions as evidenced by the stunted, drought-stressed redcedar (*Juniperus virginiana*) scattered among the grasses and forbs.

Most of the rare plants in this Natural Area Preserve occur within these arid openings, that provide requisite habitat for these shade-intolerant species. They are primarily Midwestern species. For example, the blue-hearts (*Buchnera americana*) and Great Plains ladies tresses (*Spiranthes magnicamporum*) are commonly found in the hill prairies of Illinois.

The Cherokee clubtail (*Gomphus consanguis*) is a rare, poorly known dragonfly species that is endemic to the Southeast and inhabits small, spring-fed streams. The Olympia marble (*Euchloe olympia*) is a butterfly species inhabiting barrens. The larvae feed exclusively on rockcress (*Arabis*) and the flight period for adults is mid-April to late May in Virginia.

The preserve rises above the Clinch River, a tributary in the upper Tennessee River basin, which is renowned for its aquatic biodiversity. This watershed in southwestern Virginia and northeastern Tennessee contains more imperiled aquatic species than any other in the United States. There are 31 species of rare mussels and 17 rare fish species in the upper Clinch River watershed. Immediately downslope is The Nature Conservancy's Cleveland Island Preserve. The waters around the island support many species of endangered freshwater mussels.

**Resource Management:** Natural Heritage scientists continue to study the unique flora and fauna of the preserve. To maintain the open dolomite barrens, a prescribed burning program is being considered. DCR will continue to collaborate with other conservation organizations and neighboring landowners to protect the upper Tennessee River basin.

**Public Access:** There are no public access facilities. The preserve is available for research and educational activities, and periodic interpretive tours.

**Compatible Uses:** Compatible uses include hiking, bird watching, nature study, and photography. Some uses are prohibited, including off-road vehicles, horseback riding, and the collection of animals, plants, and minerals.

**Location:** The preserve is located in Russell County near the town of Cleveland. From Abingdon, take 19 North/Alt. 58 West to Hansonville. Take 19 North for 5.5 miles to Business 19 North at Lebanon. Take Route 82 in Lebanon. Go approximately 7 miles to Cleveland. The preserve is off Route 82 just southwest of town.

### Natural Heritage Resources

#### Communities

limestone/dolomite barren

#### Plants

hairy rockcress (*Arabis hirsuta* var. *adpressipilis*) G5T4Q/S1S2  
silky aster (*Aster pratensis*) G?/S1  
blue-hearts (*Buchnera americana*) G5?/S1S2  
Craw's sedge (*Carex crawei*) G5/S2  
matted spikerush (*Eleocharis intermedia*) G5/S1  
pink thoroughwort (*Eupatorium incarnatum*) G5/S2  
Western stiff gentian (*Gentianella quinquefolia occidentalis*) G5T?/S1?  
small-headed rush (*Juncus brachycephalus*) G5/S2  
drooping bluegrass (*Poa saltuensis*) G5?/S2  
smooth lance-leaved buckthorn (*Rhamnus lanceolata* var. *glabrata*) G4G5TU/S1  
whorled nutrush (*Scleria verticillata*) G5/S2  
Great Plains ladies tresses (*Spiranthes magnicamporum*) G5/S2  
prostrate blue violet (*Viola walteri*) G4G5/S2

#### Animals

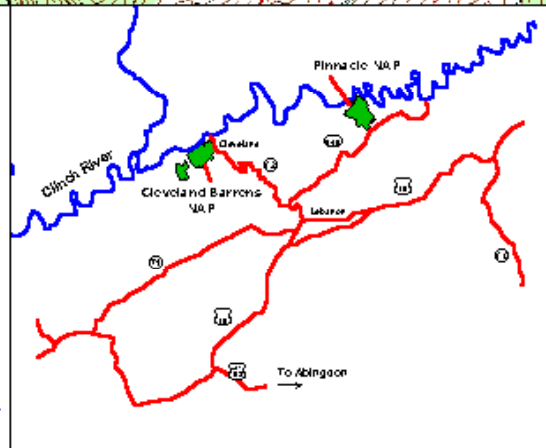
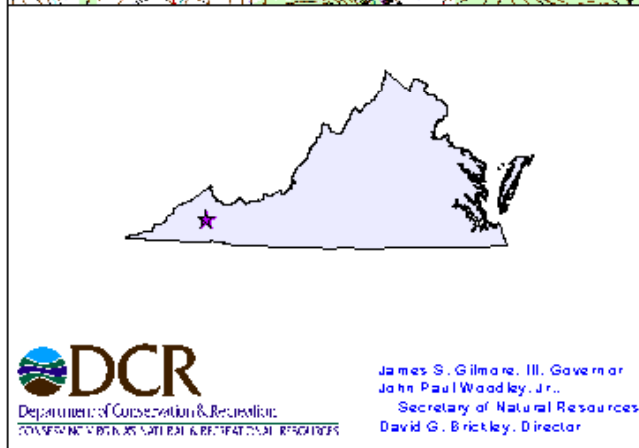
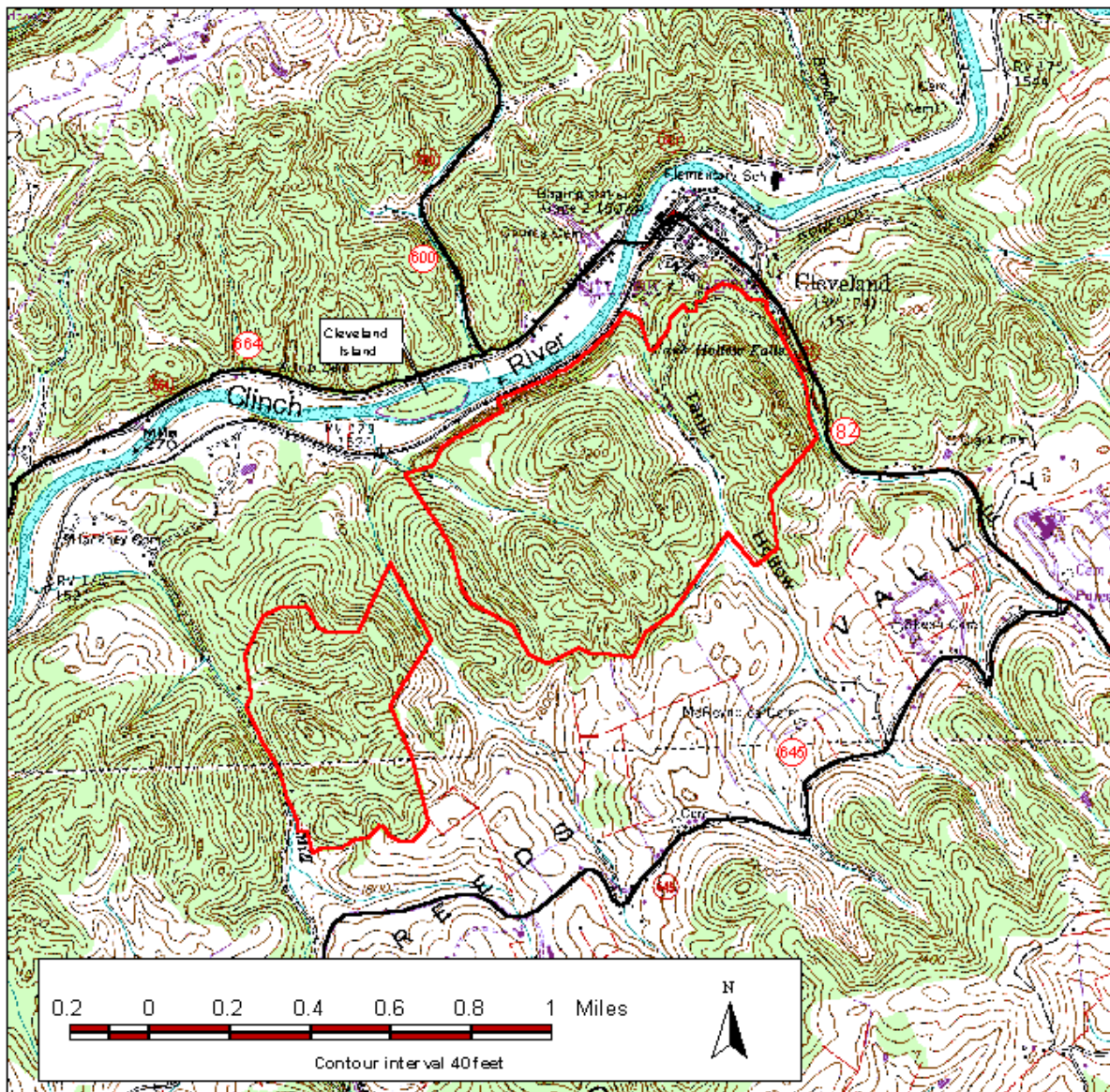
Cherokee clubtail (*Gomphus consanguis*) G2G3/S2  
Olympia marble (*Euchloe olympia*) G4G5/S2S3  
tiger moth (*Crambidia cephalica*) G4/S1

#### For more information contact:

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Map created 10/2/2000. Data sources: Topographic map - USGS, 1:50,000 scale, 1978; photo-aerial 1989 and 1978. Road & water ways - USGS, 100K DLG transportation & hydrology.